

CASE REPORT

Coinfection of Monkeypox, COVID-19 and Syphilis in a PrEP using MSM: A Case Report from Barcelona

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ABSTRACT

Monkeypox virus (MPXV) is a zoonotic disease, with endemic circulation and it's not considered a sexually transmitted infection. Recently, it has been reported a particularly high incidence among men who have sex with men (MSM). We report the first case of a male HIV-negative patient with HIV Pre-Exposition Prophylaxis (PrEP), and a simultaneous coinfection of Monkeypox Virus, COVID-19 and Syphilis.

KEYWORDS

Monkeypox virus; HIV; COVID-19; Syphilis

CASE REPORT

Monkeypox virus (MPXV) is a zoonotic disease, with endemic circulation predominantly in west and central Africa [1]. However, recently MPXV is spreading rapidly in the United States and Western Europe. A total of 1285 laboratory confirmed MPXV cases have been reported in 23 countries by June 2022 being Spain one of the most affected countries. MPXV is not considered a sexually transmitted infection (STI), but the infection occurs through direct contact with the lesions and through body fluids and therefore it may be transmitted during a sexual intercourse [2-5]. Recently, it has been reported a particularly high incidence among men who have sex with men (MSM) [2-4]. On July 23rd, 2022, the World Health Organization declared the current MPXV outbreak a Public Health Emergency of International Concern.

Our hospital, the Fundació Puigvert in Barcelona (Spain), is a reference centre for Andrology with a STI Unit. In this context, we report the first case of a male HIV-negative patient with HIV Pre-Exposition Prophylaxis (PrEP), and a simultaneous coinfection of Monkeypox Virus, COVID19 and Syphilis.

A 56-years old man was recently attended in our emergency room because of a painless genital ulcer that appeared 2 days before with no other accompanying symptom. Patient is a MSM with a medical history of depression, type 2 diabetes mellitus with a good metabolic control (HbA1C of 6.9%), and a 7-days hospitalization 6 months before for a COVID-19 related pneumonia in anamnesis. He never reported to be positive for a STI and presented negative serology tests for HIV and LUES 6 months earlier. His ongoing medication included: Escitalopram, metformin, and PrEp.

A Polymerase-Chain Reaction test (PCR) for type-1 and -type-2 Herpes Simplex Virus (HSV1-2) on an ulcer swab was performed directly along with a blood test and serology for LUES and other STI (HIV, HBV, HCV). The patient was then referred to attend the outpatient clinic the following day, but he did not attend the outpatient consultation. The following day, patient came again to the emergency room due to pain and inflammation of the penis. Physical examination revealed a genital ulcer with indurate edges and a fibrin base, foreskin edema, glans erythema (Figure 1), painful bilateral inguinal lymph nodes swelling, and two punctate erythematous lesions on the extremities, which were initially not evaluated. The patient had 37.7°C axilar temperature (99.8°F) and laboratory analysis showed leucocytosis (15000 WBC/ml), glycemia 233 mg/dL, and c-reactive protein 13.7 mg/L (n.v. <= 5.0). The PCR for HSV1-2 done 2 days before was negative while the serologies for LUES were still pending. However, the clinical hypothesis for the penile ulcer was an infected syphilitic chancre so patient was admitted to the hospital. As per protocol of our hospital, a SARS-CoV-2 PCR test was performed prior the admission: The SARS-CoV-2 PCR test resulted positive, so the patient was admitted to an isolated area.



Figure 1: Genital ulcer with indurate edges and a fibrin base, foreskin edema and schlerosys, glans erythema.

He was prescribed a single dose of 2.4 million units of Benzathine penicillin and amoxicillin-clavulanic acid 875/125 mg TID iv. Meanwhile, the results of the STI serology and bacteriological culture of the ulcer that were performed at the first consult in the emergency were the following: RPR 1/1 (but performed only 2 days after the appearance of the ulcer), total antibodies for Treponema Pallidum, MEIA and TPHA positive, and serology for

HIV, HBV, HCV negative. The bacteriological culture of the ulcer was positive for *Staphylococcus aureus*. Twenty-four hours after hospital admission, the penile edema began to subside. During the physical examination, we evidenced the appearance of new blistering, pustular and ulcerated lesions on the extremities (Figure 2), buttocks, chest (Figure 3) and scalp. Considering the recent outbreaks of monkeypox, especially among MSM, it was decided to perform a PCR of the scraping of the lesions for MPXV. We took three different samples, two from skin lesions and one from the initial genital lesion, being the first two positive for MPXV and the genital negative.



Figure 2: Blistering, pustular and ulcerated lesions on the extremities.



Figure 3: Blistering, pustular and ulcerated lesions on buttocks, chest and scalp.

The patient had a sexual history of MSM, without a fixed partner, and reported 2 sexual contacts in the last 6 weeks. The patient knew one of his partners while the other one was anonymous sex; he performed active anal sex and oral sex without using a condom. On the other hand, he did not travel to endemic areas recently.

On the 4th day after his admission, it was decided to discharge him since he had a favourable evolution: Patient was feeling well, the edema of the penis disappeared, and the genital ulcer presented a better aspect. The diagnosis was the following: 1) Primary LUES (infected chancre) + 2) COVID-19 + 3) Monkeypox. The discharge

recommendations were to remain at home and avoid contact with other people until the skin lesion are gone; contact the sexual partners; keep lesions covered and, [4], visit the outpatient clinic in a week.

During the follow up visit to our outpatient unit a week after the discharge, the patient reported feeling well with no fever: The edema of the penis and inguinal lymph nodes disappeared, the genital ulcer was almost gone and most of the skin lesions were in crusty phase. A few remained as ulcers, so we recommended to the patient to continue isolation for one more week. The patient informed us that he contacted one of his sexual partners who was already diagnosed with Monkeypox in another center. We instructed the couple also to have some serologies for syphilis, which resulted positive.

This is the first case report of Syphilis, COVID-19 and Monkeypox coinfection in a HIV-negative MSM using PrEP. It is important to mention that the diagnosis wasn't easy since the infected ulcer in the penis (chancre) was misleading and because we had never seen a monkeypox case before in our department. It is important to have a high level of suspicion to be able to diagnose monkeypox and it is important that in the emergency room a PCR for Monkeypox should be available.

We should remark that it is very likely that this patient got both Syphilis and Monkeypox from the same sexual partner. In facts, men using PrEP, while not using a condom are not getting infected with HIV but are at high risk of getting infected of other STI. Being Monkeypox sexually transmittable, it is likely that in the future more patients using PrEP are going to get infected with MPXV.

COMPETING INTERESTS

The authors declare that they have no competing interests.

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